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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/523,818	02/04/2005	Kenki Kobayashi	Q71782	3997

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EXAMINER	
HA, NGUYEN T	
ART UNIT	**PAPER NUMBER**
2831	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/523,818	KOBAYASHI ET AL.	
	Examiner	Art Unit	
	Nguyen T. Ha	2831	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *04 February 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-28* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6-18 and 21-28* is/are rejected.

7)☒ Claim(s) *2-5,19 and 20* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date *0205*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because on page 40, line 4, the word "comprising" is legal phraseology.

2. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 6-18, and 21-28 are rejected under 35 U.S.C. 102(e) as being anticipated by Monden et al. (US 7,070,631).

Regarding claim 1, Monden et al. disclose a method for producing a metal foil for capacitors (figures 1-4), comprising a step of making cut lines in a valve acting metal foil in a shape of a capacitor element with at least a part of a portion predetermined to be anode-leading out part left uncut, a step of etching the cut edge surface generated in the previous step and the surface part of the valve-acting metal foil, and a step of electrochemically forming the metal foil (column 3, lines 47-65, column 8, lines 12-14, and lines 50-67, column 9 lines 1-16).

Regarding claim 6, Monden et al. disclose wherein each of the cut portions has a quadrangular-shape having uncut portion (figures 1-2).

Regarding claim 7, Monden et al. disclose wherein the cut edge surface has an acute interior angle A of 30 degree or more with respect to the metal foil surface (figure 1).

Regarding claim 8, Monden et al. disclose wherein the width of the cut line is twice or less the thickness of the metal foil (figures 1-2).

Regarding claim 9, Monden et al. disclose wherein the plurality of capacitors is produced in a single batch process by making plurality of cut lines each having a shape of a capacitor element in a single valve acting metal foil (figures 1-2).

Regarding claim 10, Monden et al. disclose wherein the foil consists of at least one valve acting metal selected from a group of aluminum, niobium and tantalum (column 3, lines 58-59).

Regarding claim 11, Monden et al. disclose wherein the valve acting metal foil has a thickness of 0.05 to 1 mm (column 4, lines 55-56).

Regarding claim 12, Monden et al. disclose wherein the valve acting metal foil is an aluminum foil containing at least one element selected from the group consisting of Si, Fe, Cu (column 6, lines 51-53).

Regarding claim 13, Monden et al. disclose wherein the total content of the elements other than aluminum contained in the foil is from 1 to 1000 ppm by mass (column 6, lines 58-59).

Regarding claim 14, Monden et al. disclose wherein the aluminum foil contains Si in an amount of 1 to 100 ppm by mass, Fe in an amount of 1 to 100 ppm by mass and Cu in an amount of 1 to 100 ppm by mass (column 6, lines 58-62).

Regarding claim 15, Monden et al. disclose wherein the etching is AC electrolytic etching using at least one waveform selected from the group consisting of sine wave, rectangular wave and triangular wave (column 8, lines 15-20).

Regarding claim 16, Monden et al. disclose wherein the etching is AC electrolytic etching where terminals are provided on the valve acting metal and on electrodes placed to both sides of the valve acting metal and AC current is directly supplied to the terminal provided on the valve acting metal (column 8, lines 15-22).

Regarding claim 17, Monden et al. disclose wherein the etching is DC electrolytic etching (column 8, lines 23-25).

Regarding claim 18, Monden et al. disclose a metal foil for capacitors obtained by the production method (column 21, lines 25-26).

Regarding claims 21-27, Monden et al. disclose all the claimed limitations (column 22, lines 9-65, claims 21-27).

Regarding claim 28, Monden et al. disclose a method for producing solid electrolytic capacitor elements (figures 1-4), comprising a step of making cut lines each having shape of a capacitor element with at least a part of a portion predetermined to be anode-leading out part left uncut in a valve acting metal foil, a step of etching the cut edge surface generated in the previous step and the surface of the valve-acting metal foil, a step of electrochemically forming the etched metal foil to form an oxide dielectric film after cutting the foil into stripes each having a comb-like shape where foil portions each cut in a shape of an element link together in anode leading out parts, a step of forming a solid electrolyte layer of the oxide dielectric film layer, a step of forming an electrically conducting layer of the solid electrolyte layer and a step of severing the foil pieces each in a shape of a capacitor element by making a cut in the anode leading out part of each piece (column 3, lines 47-65, column 8, lines 12-14, and lines 50-67, column 9 lines 1-16).

Allowable Subject Matter

5. Claims 2-5, and 19-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With respect to claims 2-5, the prior art alone or in combination does not teach the limitation of a method for producing a metal foil for capacitor, wherein the etching is performed after protecting the portion predetermined to be the anode leading out part of a capacitor element with a protective material, and the protective material is removed

after etching the valve acting metal foil, and then the step of electrochemically forming is performed.

With respect to claims 19-20, the prior art alone or in combination does not teach the limitation of the cut portion has a curvature radius of 0.1 to 500 μm, and a porous layers formed on a portion where solid electrolyte is to be formed, wherein the thickness of the porous layer on the cut edge surface, T_2 is more that 1μm, and has a following relationship with the thickness of the porous layer on the surface of the metal foil.

Citation Relevant of Prior Art

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Sakai et al. (US 6,890,363) disclose solid electrolytic capacitor and method for producing the same.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen T. Ha whose telephone number is 571-272-1974. The examiner can normally be reached on Monday-Friday from 8:30AM to 6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 571-272-2800 ext. 31. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NGUYEN T. HA
PRIMARY EXAMINER

NH
January 8, 2007